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CONTENTS OF THIS NUMBER:

ORIGINAL DEPARTMENT.

THE ACTION OF RATTLESNAKE VENOM UPON THE BACTERICIDAL POWER OF THE BLOOD SERUM.—By CHARLES B. EWING, M. D., Baltimore, Md 529

SHOCK.—By JACOB GEIGER, M. D., Professor of Principles and Practice of Surgery and Clinical Surgery, Ensworth Medical College and Hospital, and Marion-Sims College of Medicine, St. Louis, Mo. 536

EDITORIAL DEPARTMENT.

The Press and the Hospitals 538
The Use of Sulfonal 539
Some Remarks on the Treatment of Epilepsy 540
That Insane Asylum Money 541

MEDICAL NEWS.

The Consumption of Beer 535
Examination of the Blood in Phthisis 541
The Missouri Medical College 542
Numerical Strength of the Different Schools of Medicine in the United States 542
A Hospital for Consumptives 543
Medical Co-Education 544
The Belcher Water Bath House 544
The Reviewer's Table 547
The Mississippi Valley Medical Association 545

REPORTS ON PROGRESS.

Neurology.

By H. W. Hermann, M. D., St. Louis.

Pathology of Basedow's Disease 549
Epilepsy Treated with Testicular Juice 549
Le crime a deux 550
Laryngo Spasm and Tetany in Childhood 550

Gynecology.

By T. C. Witherspoon, M. D., St. Louis.

Vaginal Hysterectomy Without Clamp or Ligature 551
Pus Tubes 551
Myomectomy During Pregnancy 551
Sloughing of the Vagina 551
Extirpation of the Uterus in Diseases of the Annexa 552
Masturbation in a Female Child 552

Abstracts From Foreign Medical Literature.

By W. C. Mardorf, M. D., St. Louis.

A Spontaneous Cure of Atresia of the Rectum 553
Treatment of Hydrocephalus 553
Gland Fever 554

MEDICAL MELANGE.

Poisoning by Potassic Chlorate 556
The Antiseptic Treatment of Scarlet Fever 556
Europhen in the Treatment of Chancroids 557

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The Action of Rattlesnake Venom Upon the Bactericidal Power of the Blood Serum.

BY CHARLES B. EWING, M. D.,

BALTIMORE, MD.

Medical Department, U. S. Army.

(From the Pathological Laboratory of the Johns Hopkins University; Read before the Association of Military Surgeons.)

AN APOLOGY would be necessary for introducing a subject of this character, on the present occasion, if it were not that the loss of life from poisonous reptiles has became so great that it calls forth the best effort of not only the military surgeons, but medical men generally, to lessen it.

The mortality in India alone reaches the alarming figure of 20,000 persons annually, hence it was not a strange coincidence that it should have fallen to the lot of the British Medical Service, led by Dr. (now Sir) Joseph Fayrer, to perform the pioneer work in that part of the globe.

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While much has been written upon this subject in general, very little has been said or done in the special line to which this paper relates.

At Prof. Welch's suggestion we conducted a series of experiments in the Pathological Laboratory of the Johns Hopkins University during the spring of 1893, having for their purpose the determination of the action of rattlesnake venom upon the bactericidal power of the blood.

Dr. Welch's attention was directed to the investigation of this subject by Dr. Weir Mitchell. Drs. Mitchell and Reichert demonstrated that the poisonous properties of rattlesnake venom depend upon the presence of proteid substances. These investigators were the first to demonstrate the existence of the so-called toxic albumins.

In their monograph on the subject, as well as from previous observation, it was apparent that the animals killed by rattlesnake venom, decomposed with great rapidity, indeed with such rapidity that Dr. Formad, who contributed an appendix upon the pathological anatomy of animals dead of rattlesnake venom, believes that there was evidence of the spontaneous generation of bacteria.

Dr. Formad thought it impossible for the bacteria to make their way into the circulation and multiply so quickly. This seemed so improbable to Prof. Welch that he suggested to Dr. Weir Mitchell the importance of having this point worked up. Dr. Mitchell kindly gave us a certain amount of poison. We were, however, fortunate enough to obtain a live rattlesnake of the diamond species, known as the crotalus adamanteus, from which the fresh venom was obtained, and used in preference to the dried poison supplied us.

It will not be out of place to recall briefly that the order ophidia, of the sub-class reptilia, is divided into three sub-divisions: First. The ophidii colubriformes, or innocuous snakes. Second. The ophidii colubriformes venenosi, or poisonous colubrine snakes. Third. The ophidii viperformes, or viperine snakes, poisonous.

To the last sub-division, viperine snakes, belong the crotalidæ or rattlesnakes, called by Fayrer "pit-vipers," being distinguished from the viperidæ or vipers proper, by possessing a pit or depression between the eye and the nostrils in the loreal region; a triangular broad head and thick body of variable length.

The crotalus is distributed widely over the globe and all are terrestial except in India, where quite a number of the genera are arboreal; all, however, lack any semblance to the horny scales or rings at the tip of the tail, known as the "rattle," except in the species called Halys, where the tail terminates in merely a rudimentary horny spine.

It is of interest to note that the Indian crotalidæ are not so venomous as their American congeners, though Asia has a very deadly species known as the Calloselasma rhodostoma, resident in Java and Siam; while South America is represented by the well known Jararacca or Craspedocephalus Braziliensis. Australia and Africa likewise contain ophidians of this class, but they are little known.

The crotalidæ of the United States are represented by ten species and three sub-species, all being equally poisonous, so far as we now know.

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Of these the Adamanteus has three sub-species, one of them, the adamanteus proper, found in this country, extending from North Carolina to Florida; a second, the Atrox, resident in the Indian Territory and Texas, also throughout that stretch of country extending to Sonora and Southern and Lower California; and a third called Scutulatus, known only to Arizona.

We had in view, in the first place, to test the question as to whether the blood of animals killed by rattlesnake-poison had lost any of its germicidal power.

We used Dr. Weir Mitchell's noose for securing the snake, and with a sterilized saucer thrust into the mouth of the animal, we collected the venom. In this way we had no difficulty in getting from 0.5 to 1 C.C. of nearly clear, slightly straw-colored fluid, quite sufficient for our purposes. This was diluted with an equal quantity of sterilized physiological salt solution and 0.25 to 0.5 C.C. of this mixture was inoculated subcutaneously under antiseptic precautions, the dose varying according to the time we wished the animal to live. This was usually from one-half to one hour and a half, though in one or two cases, three hours after the injection.

The injections were, in all cases, given subcutaneously, sometimes beneath the skin of the abdomen and at other times in the groin. The lesions differed somewhat, according to the site of injection; when made beneath the skin of the abdomen, there were most extensive peritoneal hemorrhages, whereas, when the injections were made in the thigh, these lesions were less extensive, although not absent; here the most striking effects noted, beside the deeply discolored integument surrounding the point of injection, were the underlying hemorrhages into the muscles.

The important lesions were briefly these: most extensive hemorrhage with disintegration of tissue and actual necrosis of tissue for a wide distance around the point of inoculation, ecchymoses in other parts of the body, particularly in the serous membranes. Another point which served our purpose admirably, is that the blood does not coagulate after death, or coagulates feebly and after a long interval. We, therefore, had no difficulty in collecting a sufficient amount of the fluid blood, and we did so by withdrawing the blood in less than a minute after the animal breathed its last. We exposed the heart at once, and with sterilized instruments made an incision in the right auricle, and with a sterilized pipette we aspirated from the right heart, and then passing the pipette down into the abdominal vena-cava, we secured sometimes as much as seven or eight C.C. of blood. This blood was collected in a sterilized test tube and put in the refrigerator. After twenty-four hours the red blood corpuscles had settled, sometimes a small, soft, dark coagulum had formed, and there was a layer of clear serum.

The usual statement is that the blood does not coagulate. It looks as if it did not coagulate, and as though there was merely a sedimentation. But there is, in fact, an extremely thin clot, which does not retract from the sides of the test tube. It is an extremely viscid, sticky coagulum, which adheres to the platinum needle inserted into it. We pipetted off after twenty-four hours, the clear serum, usually collecting 0.5 to 1.5 C.C. The organisms which were used to test the germicidal power of the serum, were the bacillus coli communis and the bacillus anthracis. Prof. Welch selected

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the bacillus coli communis because that is an organism which is normally present in the intestine, and also one which he had experimented upon with normal serum. He took the bacillus anthracis because that is a classic organism in regard to the action of serum. The results were uniform and striking. As a rule, we made a control experiment with normal serum; thus we killed a healthy rabbit and withdrew the serum in the same way, collected the same quantity and inoculated tubes with the bacteria to be tested at the same time, as a parallel control. The cultures were twenty-four to forty-eight hour cultures. Our bacillus anthracis was obtained in suspension from the spleen of an animal recently dead of anthrax. We wished to obtain the anthrax bacillus free from spores and thought it better to take it fresh from the animal. Similar results were obtained also, with twenty-four anthrax cultures grown at room temperature. We made a suspension in salt solution of the organisms and inoculated a known quantity, one to two platinum loops of the suspension, into the serum tube. Then we made roll cultures.

The following tables drawn up by Prof. Welch, represent only a certain number of our experiments, and are much abbreviated for the sake of clearness:

BACILLUS ANTHRACIS.

NORMAL SERUM.

No.	No. of bacilli inoculated.	After 24 hours.	After one week.
1a	485	0	0
1b	8.512	0	0
1c	210	0	0
2a	5.292	0	0
2b	1.628	0	0

BACILLUS ANTHRACIS.

VENOM SERUM.

No.	No. of bacilli inoculated.	After 19 hours.	After 24 hours.
1a	8.512	countless	
1b	25		3.233
1	68		250.000
5	3.292	countless	
4	3.292	countless	
5	3.292	countless	

BACILLUS COLI COMMUNIS.

NORMAL SERUM.

No.	No. of bacilli inoculated.	Immediately,	After 24 hours.	After 48 hours.	After one week.
1a	250.000	256	157	countless	countless
1b	175.000	188	50	countless	countless
2a	29.161	55	0	0	0
2b	3.150	18	0	0	0
3	9.990	15	58	625	countless
4	84.947	258	0	0	0

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BACILLUS COLI COMMUNIS.

VENOM SERUM.

No.	No. of bacilli inoculated.	Immediately.	After 22 hours.
1	800.000	1.077	countless
2	3.150	6	26.000
5	16.560	52	countless
4	9.990	55	countless
5	84.947	284	countless
6	84.947	231	countless
7	84.947	182	countless

With the bacillus coli communis, it will be observed that in the case of normal serum, we inoculated 250.000 bacteria. Immediately afterwards there were 256 colonies. After twenty-four hours only 157 colonies. In other words, there was not only no development, but an actual diminution in the number of bacteria. If the organisms are not all killed at the end of twenty-four hours, the germicidal power ceases and those which remain multiply. After forty-eight hours the colonies were countless. In the second experiment we inoculated 175.000 bacteria, which represented 188 colonies immediately. After twenty-four hours there were only 50 colonies, and in forty-eight hours they were countless. Taking a smaller number of bacteria, 29,161, there were immediately 53 colonies, after twenty-four hours none, after forty-eight hours none, after one week none. In other words, in twenty-four hours the normal serum had destroyed 29,000 bacteria.

These experiments were uniform in results, and point to one conclusion, that the blood of rabbits killed in one-half to three hours after subcutaneous inoculation with rattlesnake venom, has lost its germicidal power. This is of considerable interest, for it is an indication of a very profound alteration in the blood. This germicidal power of the blood is one of very great significance, on which many of the modern theories of immunity depend.

It is of special interest to ascertain under what conditions the germicidal properties of the normal blood serum are at their highest, and in what way these properties affect the composition of the blood.

The principal workers in this field have been Von Fodor, Nuttall, Wassermann, Kitasato, Buchner, Ogata, Rankin, and others. Von Fodor's work had reference to the composition of the blood and was intended to show that arterial has a more destructive action on bacteria than venous blood, and also that fresh blood has a more destructive action than that which has been standing for some time. It was also found that the germicidal power of the blood was weakened in an atmosphere of oxygen or carbonic acid gas, out the removal of gases from the blood had no appreciable effect.

A series of experiments showing the effect of moving and stationary blood upon bacteria by means of small globes containing blood, some of which were kept in constant motion and others quite stationary, resulted in no appreciable difference being observed.

Temperature affected very materially the bactericidal power of the blood, which increased with the rise of temperature from 58° to 40° C., and then gradually diminished with the fall.

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Von Fodor is of the opinion that the individual predisposition of an animal to an infectious disease stands in close relationship with the germicidal power of the blood.

A second series related to the influence of drugs on the power of blood to destroy germs.

Hydrochloric acid had no effect; tartaric acid and quinine respectively, produced a marked decrease. A slight increase was produced by common salt and carbonate of ammonium, but a more marked effect by the phosphate of sodium, while the carbonate of potassium and sodium showed a very remarkable increase. From these experiments the deduction was made that the bactericidal power of the organism was raised by any drug which increased the alkalinity of the blood.

The third series verified the conclusions regarding the alkalisation of the blood. Of eight rabbits inoculated with anthrax, all died, whilst of nineteen which had been previously injected with solution of soda, only three died. A majority of the sixteen remaining were perfectly free from disease, only a few being fatally affected.

Up to this time, however, the doctrine of phagocytosis as advanced by Metchniknoff held sway, when Nuttall struck the first severe blow to this theory. He, in his most excellent inaugural dissertation at Göttingen in 1890, showed that the destruction of virulent bacteria in the blood of animals by the leucocytes, was not at all essential, but that the serum of blood free from all cellular elements, possessed this power to a degree equal to the blood in its entirety.

Nuttall's work is graphically shown in some twenty-eight tables in his "Beiträge zur Kenntniss der Immunität." He here proves very conclusively, that in the blood bacteria presented marked evidences of degeneration before being taken up by the wandering cells, or leucocytes. It was also seen that the bactericidal power of the blood of different animals varied and that while in some, certain bacteria were promptly killed, in others these were simply restrained for a time or not affected.

Buchner, Lubarsch, Nissen, Stern and Prudden have practically verified these observations. Buchner particularly, in his experiments upon dogs and rabbits verified the findings of Nuttall, but went even further and proved that the bactericidal power of the blood in these animals did not *at all depend* upon the cellular elements, but resided in the clear serum which separated from the clot, after the blood had stood a while in a cool place. He also demonstrated that the germicidal action of blood and serum were destroyed by exposure for an hour to 55° C., or by heating to 52° C., for six hours, or to 45.6° C. for twenty hours.

Alternate freezing and thawing did not destroy the bactericidal power of serum, but it was diminished or completely checked by dialysis with distilled water, or by extreme dilution with the same. He preserved the anti-bacterial action of the serum by making an equal dilution with a .6 to .7 per cent of sodium chloride solution, and was led to believe that the activity of the serum was greater alone than when the cellular elements of the blood were present, hence he concluded that the active element is a living albumin, having as an essential constituent an alkaline base. This

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albuminoid substance is thought by Rankin to be identical with his "globulin," isolated from the spleen and lymphatic glands.

According to the views of these experimenters, the germicidal power of the blood resides in the serum alone, and phagocytosis is but a secondary process, the leucocytes taking up the bacteria only after they have been rendered inert by the germicidal power of the serum of the blood and certain other fluids of the body. For our purpose, however, it is not necessary to insist upon the humoral as opposed to the phagocytic doctrine of immunity. All that concerns us is the recognition of the bactericidal power of the blood serum under certain conditions.

The loss of this normal germicidal power helps us to explain the varying rapidity with which post-mortem decomposition sets in. It is well known that persons dead of different diseases, decompose with varying degrees of rapidity. We cannot explain this differing rapidity of decomposition simply by variations in temperature, for under the same external conditions one body will be decomposed in comparatively few hours, and another may remain undecomposed for several days. We selected the animals killed with rattlesnake venom because it is well known that they decompose with great rapidity. The bodies of human beings killed by snake venom are also said to decompose with great rapidity.

The results of our experiments furnish a satisfactory explanation of this phenomenon. The blood at the time of death and even before death, has lost all or nearly all power of resisting the invasion and multiplication of certain bacteria, so that the bacteria of putrefaction which are normally present in the intestine, develop with astonishing rapidity, and even before the animal is cold produce this wonderful rapid decomposition. Our experiments are also suggestive as regards certain secondary and mixed infections. The toxic proteids of snake venom belongs to the same class of poisons as those formed by toxic bacteria, such as the bacillus of tetanus, of diphtheria, etc.

It is easy to suppose that these infectious diseases may cause a diminution of the germicidal power of the blood against secondary invaders, of which common examples are the pyogenic bacteria present often in our mouths and intestinal canals, and which in an individual whose resistance is lowered by a loss of the germicidal power of the blood, may grow and multiply. In other words, we can undertsand better the causation of many of these secondary infections.

The Consumption of Beer.—According to some statistics compiled in Vienna, there was a vast consumption of beer in the world during the year 1893, amounting to over 4,500,000,000 gallons. Germany heads the list with 1,202,132,074 gallons, an increase of 34,000,000 over 1892, the consumption being thirty-three gallons per head, ranging from sixty-two gallons in Bavaria to twelve gallons in Lothringen; Great Britain second, 1,165,752,000 gallons, or thirty per head; America, including the whole of the Western Hemisphere, is third, with more than 1,000,000,000 gallons, or sixteen per head. More than 7,270,000 tons of malt and 82,000 tons of hops were used in the manufacture of the beer for the world.—*Med. Rec.*

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The Medical Fortnightly

Shock.

By JACOB GEIGER, M. D., St. Joseph, Mo.

Professor of Principles and Practice of Surgery and Clinical Surgery, Ensworth Medical College and Hospital, and Marion-Sims College of Medicine, St. Louis, Mo.

READ BEFORE THE SOCIETY OF THE SURGEONS OF ST. JOSEPH & GRAND ISLAND RAILROAD, ST JOSEPH, MO., JULY 19TH, 1894.

THE subject which I desire to present briefly to the Association is of vital interest to the surgeon, and of no less importance to the physician. The literature upon the subject is extensive, but unfortunately not as clear as we could wish. The term shock is used in such a number of different ways that the student, though somewhat familiar with its pathology and even with its ciinical aspect, is yet confused as to its real nature, and finds himself unable to differentiate shock from other conditions or to understand the therapeutic principles involved in its treatment or prevention.

Shock may be defined as a sedative impression with a characteristic reaction, or as a sudden depression of the vital forces, the result of mental or physical violence, which depression shows itself most markedly upon the vasomotor elements of the abdominal circulation.

In the minds of many there is no difference between shock and collapse, but this is clearly a mistake, for while in a shock we have a characteristic tendency to a prompt and complete reaction, with rise of temperature and increased activity in the circulation, in collapse we find no such tendency.

I have been impressed with the very close resemblance, in a general and specific manner, between shock and inflammation. In either condition at the very onset, we find as a result of the irritation, the fundamental function of muscular tissue exhibiting itself in contraction of the arterioles and capillaries; this is followed in the second stage of both shock and inflammation, by dilatation of the vascular elements, and in the third stage we have stagnation of the blood current or complete stasis with complete dilatation of the arterioles and capillaries. Owing to the fact that the abdominal circulation is so delicate and feebly supported, the effect is more marked in this location, the blood of almost the entire body seeking the abdominal cavity.

If there is a prompt reaction to this condition we term it a state of shock. If the condition is without this reaction it is termed collapse, and if we find, so far as I am able to discern, the same condition in a localized area, we describe it as inflammation.

The seriousness of shock varies much with the mental condition, age, and health present and previous of the individual, depending in a marked degree, also, upon the healthy condition of the heart and blood vessels. Women suffer less from shock than men, due, perhaps, to the fact that they are frequently inured to suffering and readily tolerate pain. And here I wish to state that many persons will acquire a certain degree of toleration to surgical interference, and I believe that much may be gained and many lives saved if we are careful not to do too much at once. If there is a

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double pyosalpynx I am convinced that in cases where there is evidence of shock or the patient is much weakened from any cause, it is a wise procedure to remove only one tube, rather than carry the operation to completion, and thus endanger or sacrifice life. The extent of violence bears no definite ratio to the degree of shock. A prize fighter who can endure much punishment, may faint while being vaccinated. And yet I would urge you to do as little injury as you possibly can, and do it quickly. Make as short incisions as are compatible with safe and swift action. Spill no blood that might be saved. Hemorrhage from any source requires careful attention, especially in surgical interference about the head and neck. It makes much difference at what time during the operation the blood is lost. A large amount lost quickly at the beginning produces much more shock than a similar quantity lost at the close of the operation, or distributed over the entire period.

The treatment of shock resolves itself into prophylaxis and the application of suitable remedial agents after the condition ensues. The question arises, have we any remedy or remedies that will meet the indications for prevention or subsequent treatment. It is clear, I believe, that if the vasomotor nerves are the ones most involved in the irritation, we should apply a remedy that will, if possible, obtund these nerves and prevent the peripheral contraction, followed by dilatation both peripheral and central. Such a remedy we have in opium and its alkaloid, morphia, combined with atropin. Second only to this remedy I would place alconolic stimulants. In medical shock these remedies should be given to prevent a greater degree of depression, and in surgical operations they will be found eminently practical for its prevention. If shock is severe and collapse threatened, we need a remedy that will act directly upon the nerve centres, increasing their ability to supply the extra force demanded. For this indication the drug strychnia takes first rank, and should be given in large doses, beginning with not less than 1-20 of a grain, which dose may, if necessary, be repeated several times at short intervals.

These remedies have, in my hands, given excellent satisfaction. I have operated with and without the previous administration of opium and alcoholic stimulants, and am convinced of their utility, as I am also convinced of the beneficial effects of strychnia. In addition to drugs we have at our command powerful, non-medicinal remedies, such as hot water and hot applications, warm enemata, and in cases of ex-sanguination, intravenous and intra arterial injections of saline solutions.

In the prevention and treatment of shock act promptly, act heroically, have the courage of your conviction, let your line of action be such as I have suggested, and I am certain that in the large majority of cases your efforts will be crowned with success.

The Next Issue of THE FORTNIGHTLY will contain a full report of the meeting of the Tri-State Medical Society, at Jacksonville, Ill.

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Our New Feature:
$225.00 in Prizes for Contributions.

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NEWS of Societies, and of interesting medical topics cordially invited. Write on one side of paper and be brief Address books, subscriptions, and communications to THE MEDICAL FORTNIGHTLY, 1006 Olive Street, St. Louis

The Press and the Hospitals.

IN ALMOST every large city, there arises from time to time the question as to what extent the public is interested in the conduction of the city institutions, and whether the physicians in charge of these institutions should give for publication in the daily press, detailed descriptions of operations performed on the patients who have been admitted to them for treatment. The question has recently received some attention from the St. Louis Board of Health, and at a recent meeting of that body, the following resolutions were adopted:

WHEREAS, The nature of the diseases or infirmities of patients sent to the city institutions should be as carefully shielded from publicity as are those of persons receiving professional treatment in their own homes; Therefore be it

Resolved, That the board approves the following rules:

1. The superintendents of the several hospitals are hereby authorized and required to refuse to divulge to anyone not officially entitled to receive

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it, any information respecting the names, the cause or causes which led to the admission of patients to the institutions under their charge, nor concerning their illness or the treatment received while there, and they will cause this rule to be strictly observed by every attache and employe of the institution.

2. The superintendents are authorized to deny to the representatives of the public press access to their respective institutions, when it is found that this courtesy tends to defeat the purpose of the above rule.

The above rules do not restrict reports made to medical societies, nor to medical journals.

This action on the part of Dr. Homan and his associates has naturally met with the disapproval of the daily press, as it will eliminate from their columns the sensational headings, followed by the more sensational, inaccurate and distorted descriptions of "remarkable operations performed at the City Hospital." The justice of the measures, however, must be recognized by all. To be sure the city pays the expense of conducting these institutions, but the public would have a poor idea of how they are conducted and the character of the work done by the physicians in charge if it relied upon the newspapers for the information. And then the fact that the patients treated there are charity patients, is no reason why their infirmities should be published to the world. W. M. W.

The Use of Sulfonal.

THE USE of hypnotics is becoming more universal, first with physicians, and second with the laity who, without a prescription, buy chloral, sulfonal and other hypnotics freely at the drug stores. Recently the writer met with a case of insomnia in a neurotic lady who, without a physician's suggestion or prescription, had been buying sulfonal for her own use, and she used it freely, twelve to fifteen grains at a time. The writer has been using sulfonal since its introduction, and believes it to be a safe hypnotic, but it is a dangerous drug, nevertheless. Even in the hands of the experienced, and even more so in the hands of persons who do not understand its indications and limitations.

There are individuals possessed of idiosyncracy for this drug, who are alarmingly affected by small doses. Especially is this true of the neurotic and psychic degenerates who, without any previous warning, go into a state of collapse and approach very near to death's door, when affected by the drug. Experience has taught the wrirer to be cautious and not over-confident as to results when sulfonal is administered. Twenty grains administered in two doses at an interval of one hour, to a young lady suffering with acute delirious mania, caused profound stupor in four hours, with much prostration. Her respirations became labored and stertorous, about forty per minute, pulse 120 to 130, temperature reached 103 in four hours, and 103 4-5 in six hours. She regained consciousness in twelve hours, but immediately went to sleep and slept for six hours more. After awakening she was prostrated, refused nourishment, passed urine freely and was more or less delirious. Inco-ordination continued for several days, and the temperature became normal after two days. She ultimately recovered.

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This case impressed the necessity of care in the selection of sedations and hypnotics, and showing that where the toxic effects are noticed the indications are to stimulate the respiratory centre. To this end strychnia hypodermically was vigorously used. About ¼ of a grain being the total amount used throughout the day.

Strychnia is, we believe, a good antidote for sulfonal poisoning.

We believe sulfonal should be prescribed only by the physician, and then only after having carefully studied the case. F. P. N.

Some Remarks on the Treatment of Epilepsy.

THE treatment of epilepsy is, confessedly, more or less empirical. While we recognize in the bromides our most reliable "sheet anchor," yet we repeatedly see failures resulting when they are employed. This is due largely to the careless way they are prescribed. An epileptic convulsion, to the average physician, means the use of the bromides in some form, in the treatment of the disease. This has come about, no doubt, by the success which has attended the use of the drug. And until some new preparation is discovered that will overcome its evil effects and give better results, it will continue to hold the first place, as the treatment *par excellence*. Every physician who has had much experience in the treatment of epilepsy, has learned to perfer some one of the bromides in his practice. The bromide of potassium is justly noted as the most satisfactory in its effects, and while digestion is disturbed by it, sometimes to an alarming extent, it nevertheless, by decreasing the severity and frequency of the attacks, renders noble service.

The writer has, for several years, preferably used the bromide of sodium, believing the physiological effects are obtained more slowly, but when secured the drug is more easily borne and can be pushed to a greater and safer degree.

To obtain the best results by the bromide treatment we must commence with the minimum dose, say ten grain doses, three times a day, gradually increasing until thorough saturation is obtained, without producing bromism. Then, after maintaining this maximum dose for a few days, the dose is gradually diminished, from day to day, until the minimum is again reached. By this method bromism may be avoided if the digestion be carefully watched.

The drug should be used continuously and not stopped, for weeks at a time, and again taken up after the patient has had another convulsion. A cessation of convulsion for a prolonged time does not mean that a cure has been effected. Far from it, for in fact, several years should elapse before one is safe in hinting at a cure of epilepsy. The writer has had patients go for eighteen months to two years without an attack and then suddenly have a series of severe convulsions of "grand mal" type develop.

Most epileptics have feeble circulation, and under such conditions the patient should take digitalis. It has been the writer's custom to combine digitalis in most all prescriptions. Hare says he sees no reason why it

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should influence epilepsy; it does, nevertheless, and we believe by its action upon the circulation, which is improved in the greater portion of the cases.

The biborate of soda has its advocates, but only in certain cases, preferably the nocturnal form of epilepsy.

In a series of cases extending over four years, it was used more in the line of an experiment in therapeutics of this disease, with results far from satisfactory, excepting in one well defined case of idiopathic epilepsy with insanity, in which case the mental symptbms cleared up, and for eighteen months he did not have a fit, where formerly he averagee four to eight a day. He left the hospital and did well at home for six months, when he became negligent about taking his medicine, with the recurrence of the attacks as a result.

A combination of the bromides, digitalis and biborate of soda gives good satisfaction and is a favorite prescription of the writers.

Now it is important that regulation of the digestion, bowels, etc., should be as carefully followed as the use of drugs.

Good hygienic conditions, well cooked and non-stimulating diet, exercise and occupation tend toward making life bearable to the unfortunate who is afflicted with the dread disease epilepsy. Surgical interference should be considered in the Jacksonian or focal type of epilepsy, especially during the earlier manifestations of the disease and before the epileptic habit is established. Excision of the localized centres is justifiable and will be more often done in the future. F. P. N.

That Insane Asylum Money.

After a year and a half's waiting, State Treasurer Stephens has drawn his official check in favor of St Louis for half of the $50,000 appropriated by the Legislature for the support of the State's paupers in the City's Insane Asylum during the years 1893 and 1894. We have lost the interest, but should consider ourselves fortunate in getting half the principal. About $19,000 of the other half is now due, and the last month's installment will be at the end of the year, but there's no telling how soon we'll get the money unless we mandamus both the Treasurer and Auditor again.—The Republic, September 29th.

In this connection, the probability of having for our next State Treasurer one whose sympathies are largely with St. Louis, is very gratifying. We mean Hon. Ed. T. Orear, formerly of St. Charles, St. Louis, and Saline County, Mo., a gentleman whose candidacy for that office has been assuming very prominent proportions. The honorable Ed. is the most genial and obliging, as well as one of the most consciencious and business-like of our state officials.

We hope to see him the Democratic standard bearer for Missouri finances.

Examination of the Blood in Phthisis.—The Colorado State Medical Society has offered a prize of $100 for the best essay on the diagnosis of tuberculosis by examination of the blood. Preference is to be given to the detection of the pre-tubercular state. The prize is open to an essay written in the English language, condensed to read in thirty minutes time; and the award is to be reserved for an essay deemed sufficiently meritorious, that is, one giving rules for the diagnosis to be made from the blood alone, without the patient being seen. The Prize Committee consists of Dr. Charles Denison, Dr. H. A. Leman, both of Denver, and Dr. S. E. Solly, of Colorado Springs.

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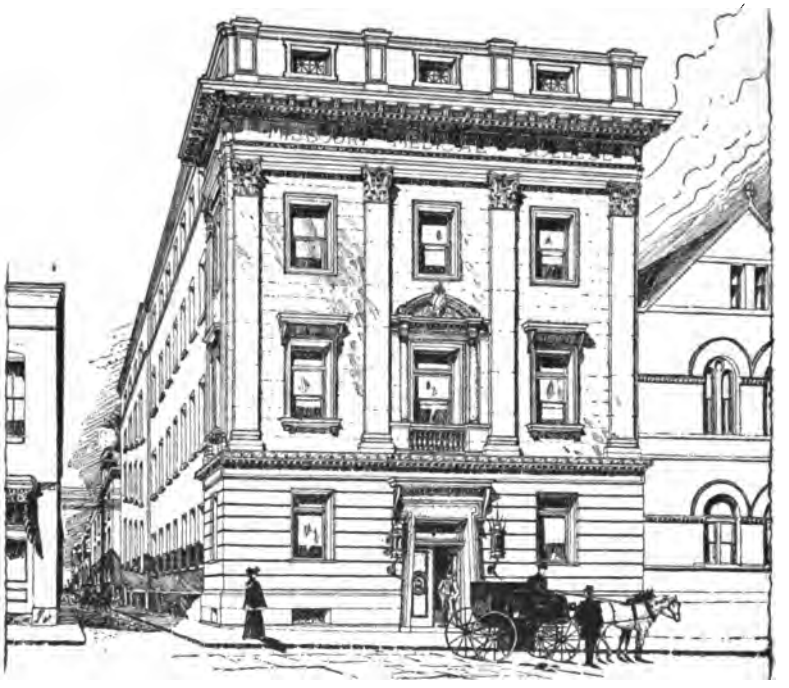
The Missouri Medical College is erecting a new building adjoining its present polyclinic building, on the south. With the adoption of the graded courses, increased laboratory space was regained, duplicate amphitheatre and lecture halls were demanded, and more clinic rooms were needed; so, alive to their obligations to the public, the faculty has planned a building that will be architecturally beautiful and at the same time combine new, novel and convenient features such as the latest experience in medical teaching and dispensary work has suggested. We present above a cut of the facade, which will be of beautiful light Merrimac lime stone, the side and rear of cream-colored Milwaukee brick, the general effect serving to make the whole light and cheerful in the extreme.



New College Building on Jefferson Avenue, bet. Washington and Lucas Avenues, St. Louis.

Numerical Strength of the Different Schools of Medicine in the United States.—The following estimate of the numerical strength of the different schools of medicine in the United States was prepared by Dr. John K. Skudder and published in the *Eclectic Medical Journal*. The difficulty of preparing a correct list of this kind can be readily appreciated, though this estimate probably comes as near presenting the true state of affairs as any that could be made:

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STATES.	A. Total Number.	B. Polk's List.	C Regular	D. Hom.	E. Electric.	F. Physio-Med.	G. Unclassified.
Alabama	2117	1900	1566	24	99	...	211
Arizona	108	98	74	4	10	...	10
Arkansas	2586	2328	1765	50	249	6	258
California	3300	2970	1795	368	452	25	330
Colorado	1165	1049	738	89	93	13	116
Connecticut	1267	1141	735	126	147	7	126
Delaware	202	263	195	30	9	...	29
District of Columbia	831	748	565	71	26	3	83
Florida	788	711	498	57	73	5	78
Georgia	3825	2543	1789	46	401	25	282
Idaho	176	159	101	7	24	...	17
Illinois	8002	7206	4245	975	988	192	800
Indiana	5006	4506	2293	293	1020	400	500
Indian Territory	416	375	266	2	62	4	41
Iowa	4434	3991	2982	450	470	95	44
Kansas	3089	2781	1636	360	414	63	308
Kentucky	4063	3657	2883	125	218	25	406
Louisiana	1412	1271	1048	36	46	...	141
Maine	1222	1100	784	137	57	...	122
Maryland	2120	1918	1606	76	24	...	212
Massachusetts	4457	4012	2646	687	221	12	445
Michigan	4057	3552	1905	686	459	97	405
Minnesota	1584	1426	877	239	127	25	158
Mississippi	1682	1514	1268	18	60	...	168
Missouri	6178	5561	4000	381	538	25	617
Montana	299	270	157	19	20	45	29
Nebraska	1730	1547	876	202	264	41	173
Nevada	66	60	38	10	6	...	6
New Hampshire	720	648	435	90	47	4	72
New Jersey	2030	1827	1243	301	80	...	203
New Mexico	147	133	400	10	9	...	14
New York	11171	10054	6725	1338	824	50	1117
North Carolina	1799	1619	1401	11	24	4	179
North Dakota	272	245	187	22	9	...	27
Ohio	7579	6814	4030	670	1199	155	757
Oklahoma	277	241	171	6	38	...	26
Oregon	909	819	597	47	72	13	90
Pennsylvania	9310	8479	6405	684	384	75	931
Rhode Island	654	589	289	107	28	...	65
South Carolina	1422	1280	1103	5	5	25	142
South Dakota	450	405	266	40	54	...	45
Tennessee	4379	3942	3193	68	225	19	437
Texas	5288	4756	3677	99	312	50	528
Utah	273	256	186	18	23	2	27
Vermont	696	527	282	121	44	10	69
Virginia	2806	2526	2191	28	27	...	280
Washington	910	819	643	48	18	19	91
West Virginia	1061	955	717	20	99	13	106
Wisconsion	1966	1870	1139	330	195	10	196
Wyoming	75	68	46	9	6	...	9
Total	118453	106633	72028	9648	10292	1553	11524

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A. Total estimated number of physicians of all schools, according to a recent list issued by the Gardiner Co., of New York.

B. Total estimated number of physicians of all schools, based on Polk's Directory, making allowance for duplicates and dead addresses.

C. Total estimated number of so-called Regular, or Allopathic Physicians.

D. Estimated number of Homeopathic physicians. This estimate was arrived at by adding ten per cent to the list furnished us by Messrs. Boericke & Tafel, of Philadelphia.

E. Estimated number of Eclectic physicians, based on the systematically arranged list of Lloyd Brothers, Cincinnati.

F. Estimated number of Physio-Medical physicians, is furnished us by the editor of "Sanative Medicine," Westerville, O.

G. The remaining necessarily unclassified. Many of these are probably "duplicates," "dead addresses," and 'patent medicine men." Estimate, 10 per cent of total registry of all physicians

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Dr. A. B. Miles, Prof. of Surgery in Tulane University, New Orleans, died August 5th, at the age of forty-one years.

Pasteur's Vaccination.—The authorities of Lower Austria have decided that a station for vaccinating against rabies shall be established in the neighborhood of Vienna.

Not Healthy.—Mr. Hugging: What do you think of the latest medical dictum that kissing is unhealthy? Mr. Hunker: It is quite true. Mr. Munn happened to catch me kissing his daughter, and I was laid up a whole week.—*N. Y. Sun.*

Medical Co-Education.—Speaking of co-education at the Johns Hopkins Medical School, in the course of a speech made after the recent annual dinner of the Harvard Medical Alumni Association (*Boston Medical and Surgical Journal*), Dr. William Osler said: "I was warmly in favor of it, particularly when the ladies came forward and offered half a million of dollars. I came here today, with tears in my eyes and sorrow at my heart, to tell you that co-education has proved an absolute failure, from one standpoint. When I tell you that 33.3 per cent of the ladies, students, admitted to the John Hopkins Hospital at the end of one short session are to be married, then I tell you that co-education is a failure. If 33.3 per cent fall victims at the end of one session, what will happen at the end of the fourth? —*Lancet-Clinic.*

The Belcher Water Bath House, Second and O'Fallon Streets, brings to our door a mineral water bath-service, the lack of which has long been felt by our local profession. Recommending patients to depart from his supervision and care, and betake himself to a distant health resort or mineral spring has never been o'er weeningly popular with the practicing physician; the opportunities and inducements for permanent dissociation of that pleasant relationship of physician and patient are too numerous under such circumstances. The Belcher Water Company has made accessible for use, both for bathing and drinking purposes, a water which has long been recognized as having natural medicinal qualities equalling many of the renowned springs of the country. The accoutrements and furnishings for bathing are most admirable, ranging from comfort to luxury. We commend this new feature of St. Louis' progression.

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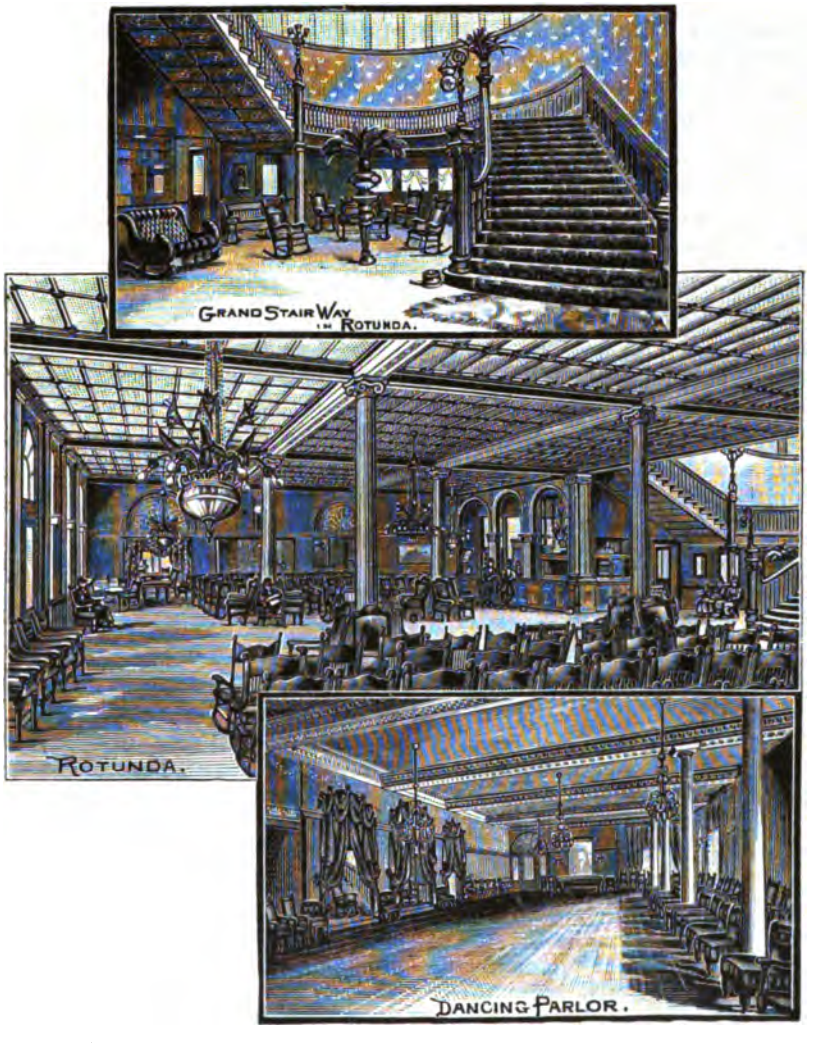
The Mississippi Valley Medical Association meets at Hot Springs, Ark., November 20th, and General Townsend of the Iron Mountain route is making arrangements for special trains from St. Louis, to carry the delegates and their friends. "The Arlington" will be the "home of the pilgrim" and all physicians are advised to secure their rooms early "to avoid the rush."



INTERIOR VIEWS—"THE ARLINGTON," HOT SPRINGS, ARK.

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Fortnightlettes

A statue to Claude Bernard will be unveiled at Lyons on October 26th.

The Universities of Holland, four in number, have 2,972 students, of whom 19 are women.

The Supreme Court of Vermont has recently decided that syphilis is a sufficient ground for divorce.

Nancy D. Richards, M. D., wife of Congressman Richards, of Ohio, is practicing medicine in Washington.

Brand has a record of 1,223 cases of typhoid fever treated by the cool bath, with a mortality of but one per cent.

The mortality from the administration of chloroform is about three per cent in a population of 450,000 at Melbourne, Australia.

Dr. G. Frank Lydston has opened a Private Surgical Infirmary, Office, 1208 Champlain Building, Chicago. Hours, 1 to 5 P.M.

Prof. Rollett, of Lyons, Professor of Hygiene, and a well-known syphilographer, died August 2d, at the age of sixty-nine years.

Dr. George Thomas Jackson has been appointed Foreign Secretary for the United States of the Third International Congress of Dermatology to be held in London, July 31st to August 4th, 1895.

The Berlin Obstetrical and Gynecological Society has elected Doctors T. Gaillard Thomas, and Thomas Addis Emmett, of New York City, and Theophilus Parvin, of Philadelphia, honorary members.

London now claims to be the healthiest of the large cities. The death-rate being only 16.3 per thousand persons. The death-rate in other large cities are, Berlin, 18.2; Paris, 20.5; Vienna, 22.5; New York, 19.6.

According to some statistics presented to the House of Commons by the war secretary, out of a total of 196,534 men in the British army, there were in one year 52,155 admitted to hospitals to be treated for venereal diseases, or more than one-quarter of the effective force.

The Memphis Board of Health has petitioned the Tennessee Board of Health to inaugurate measures directed toward procuring legislation prohibiting infant and child life insurance within that state. The action is demanded on the ground that the practice predisposes to criminal negligence in the care of children, and is, therefore, prejudicial to public health.

Sir Joseph Lister has been awarded the Albert medal. The council of the Society of Arts has, with the approval and sanction of the president, His Royal Highness the Prince of Wales, conferred this token "for the discovery and establishment of the antiseptic method of treating wounds and injuries, by which not only has the art of surgery been greatly promoted and human life saved in all parts of the world, but extensive industries have been created for the supply of materials for carrying the treatment into effect."

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The Reviewer's Table.

Books, pamphlets, instruments, etc., for this department, should be sent to the Editor, 1006 Olive street, St. Louis

LESSONS IN QUALITATIVE AND VOLUMETRIC CHEMICAL ANALYSIS; By Dr. Charles O. Curtman, Professor of Chemistry, and Director of Chemical Laboratory in the Missouri Medical College. Fourth edition, revised and enlarged. 1864. Price, $1.50.

¶ In 1883 Dr. Curtman issued the first edition of the present volume, which had its inception in a translation and amplification of Beilstein's "Anleitung." The work has been so favorably received that the author was led to enlarge the scope of each edition so that the book now has 295 pages crowded with accurate and concise instructions for chemical manipulations—just such are needed by students in medicine or pharmacy. Directions for the manipulation of chemical apparatus precede a large number of examples for practice in qualitative analysis of inorganic substances, base and acid radicle. Then follows a systematic course in qualitative analysis of salts, and examples for practice in the detection of the more important compounds, alkaloids, glucosides, etc. Volumetric analysis is succinctly and plainly treated in the seventy-six pages devoted to that subject. The chemical examination of drinking water and the chemical and microscopic examination of urine are handled in the able and practical manner that characterizes the work throughout. To the practicing physician, the last two chapters (urine and water analysis) are particularly valuable. The author has in this edition adopted the chemical nomenclature in accord with the rules of the American Association for the Advancement of Science.

J. C. FALK.

ESSENTIALS OF ANATOMY; By Chas. B. Nancrede, M. D., Professor of Surgery and Clinical Surgery in the University of Michigan. Fifth Edition. Pp. 372. Philadelphia: W. B. Saunders. 1894.

¶ This manual is No. 3 of the Saunders "Question Compend" series and is arranged in the question and answer form. The advantages and disadvantages of this series, which is the best we know of, are too well known to the profession to warrant further discussion. In this edition there has been added a complete set of plates on osteology which were taken from Gray, and which materially increased the value of the book.

TREATISE ON DIPHTHERIA; By H. Bourges, M. D.

¶ This characteristic little book of the Physicians' Leisure Library, (Geo. S. Davis, Detroit) commends itself to the general reader for its comprehensiveness and yet its brevity. It is at first rather startling to see at glance at the contents that the writer has undertaken to deal so comprehensively within so few pages, with a subject whose literature has already become so extensive. Nearly every division of the subject receives a consideration, but it is the bacteriological aspect of the disease that is given most prominence. The pages devoted to this part of the subject, while necessarily too brief and insufficient for the experienced bacteriologist, are good reading for the general practitioner, and give him a short account of the simpler methods of staining and examining, with a summary of the latter conclusions from the standpoint of the bacteriologist. The researches of Klebs, Loeffler, Roux, Yersin and others who have eminently labored

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over the specific microbe and its poison, are succinctly given. There seems to be considerable exaggeration as to the frequency of the unfavorable outcome of post-diphtheritic paralysis, which though occasionally obstinate has, in our experience, been so generally of favorable prognosis. Then, too, the consideration of the treatment is surprisingly barren. Alcohol is mentioned incidentally, as possibly helpful, but its great importance in large and frequent doses, which is an inevitable conclusion of our best clinicians, is not so much as mentioned. In referring to the treatment of laryngeal stenosis, tracheotomy is recommended, but the utter silence regarding intubation seems only to signify ignorance of this important measure. This omission might have been expected in a foreign writer a few years ago, but is hardly pardonable now since intubation has been tried and highly commended in several of the great medical centers abroad. With these exceptions the book is quite orthodox, and is beyond doubt an excellent little volume for the busy practitioner's perusal.

A MANUAL OF INSTRUCTION IN THE PRINCIPLES OF PROMPT AID TO THE INJURED; By Alvah H. Doty, M. D., Major and Surgeon, Ninth Regiment, N. G. S. N. Y., etc. 12mo, 304 pages, 118 Illustrations. Cloth, $1.50. D Appleton & Co., New York.

¶ This excellent little book appears in its second edition, enlarged and improved by the addition of a Chapter on Hygiene, and the substitution of the United States Ambulance Corp Drill for the original chapter on Transportation of the Wounded. These additions make it one of the best of its kind, and adapts it especially to the needs of military organizations. The lucid chapters, however, on the Anatomy and Physiology of the Human Organism, if carefully perused by the laymen in any walk of life, would enable him to cast aside the "veil of mystery" with which, in his ignorance he enwraps the human frame. The subsequent chapters on the injuries and ailments to which man is heir, would then also be better understood, and a much more intelligent application of the practical points contained therein follow, to the saving of many more human lives, or at least the alleviation of much suffering. We regard the chapters on Antiseptics and Hygiene as having a direct bearing on the needs of the laymen. A clearer comprehension of the laws of life and adherence to these laws, would greatly reduce human suffering, while a less vague knowledge of the influence of micro-organisms upon diseases and diseased conditions, than exists in the mind of the average layman, would save many an hour of suffering to the injured party, to say nothing of the worry and extra labor saved an already overworked surgeon. We can recommend this little work not only to military organizations, but we believe it should be placed in the hands of every member of our police departments, and all men who, because of the nature of their positions, may be called upon to furnish the injured with immediate aid, or to adopt such procedures as may place the life of the injured out of jeopardy while awaiting the arrival of the experienced physician or surgeon.

H. N. L.

La Revue Internationale de Bibliographie, edited by Prof. Jules Rouvier, of Beyrouth, has recently undergone modifications for the better and, though maintaining its international character and its high grade of interest, will henceforth be known as the "*Revue Internationale de Medecine et de Chirurgie pratiques.*" Dr. L. Tournaint, of Paris, has been appointed Secretary of the publication, whose offices are now located at 37 rue Taitbout, Paris.

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The Medical Fortnightly

Reports on Progress.

NEUROLOGY.

BY H. W. HERMANN, M. D.,

ST. LOUIS.

Pathology of Basedow's Disease.—H. Reinhold (*Munich Med. Wochschrift*, June 5, 1894) believes the seat of the disorder to be in the thyroid gland, and reports the following case in support of his view. The patient, previously healthy, contracted the grippe, which was complicated with an acute inflammation of the right thyroid gland. Suppuration did not occur, and the swelling and fever soon disappeared. During the fever the pulse was rapid; became normal, however, when the temperature returned to normal. Patient recovered and returned to work. Three months later there was gradual but pronounced simultaneous development of the classical symptoms of exophthalmic goitre. The author maintains, therefore, that it is a typical case of Basedow's disease, resulting from an acute infectious inflammation of the thyroid gland. Reinhold's view is certainly supported by clinical experience, as I distinctly recollect a number of cases which were at first merely simple goitre, but gradually developed the other classical symptoms of Basedow's or Grave's disease. Never did I see among the large number of cases (about 30) of exophthalmic goitre which have come under my observation, the thyroid gland free from disease or enlargement. While one of the other symptoms which make up the classical picture, the tachycardia, the exophthalmos, the fine tremor or Graefe's symptom may be wanting.

Epilepsy Treated with Testicular Juice.—Burneville and Cornet (*Prog. Med.* Dec. 9, 1893). The authors treated thirty cases with hypodermic injections of testicular juice at the Bicêtre. In eight cases only was there noticed a slight diminution in the number of attacks, while in twenty cases there was decided increase in the number of spells. In no case was there any improvement in the mental development reported. These results are in perfect accord with those of Féré, one of the ablest French neurologists, who also gave the method a thorough trial at the Bicêtre Hospital. In his communication to the Societè de Biologie, just four years after Brown-Séquard's, he, in unmistakable language, disapproves of the method and cites nine cases which had been under treatment. No favorable result had been obtained in any case; on the contrary, the injections seemed to act as a depressant.

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Le crime a deux.—(*Am. Med. Psych.*, July, 1893). According to Sarègue and Fabret, three conditions must be present to produce Folie á deux: The secondarily diseased patient must be weak-minded and very "suggestible." Must live in constant community with the first, and must have a personal interest in the matter. From a legal standpoint, then, the responsibility should be greater for the one who, endowed with intelligence, conceived the plan for the crime, than for the one who with his inferior intelligence, was simply a blind tool in the hands of the more designing one.

Laryngo Spasm and Tetany in Childhood.—M. Kassowitz. (*Wiener. Med. Wochenschrift*, November 13, 1893). The author opposes the view of Loos that laryngo spasm in children is simply a symptom of tetany, and that tetany has no connection with rickets. He admits that latent tetany frequently develops in cases of spasm of the respiratory apparatus, but by no means in all cases. In 44 out of 108 children with laryngo spasm, there was no other symptom of tetany. Several times indubitable cases of tetanie never presented respiratory spasm. In the great majority of cases infantile tetany as well as spasm of the vocal chords, is intimately connected with acute rachitis, so that the rachitic affection is the direct cause of the spasmodic symptoms of this. The author has established the fact that tetanie, if it attacks children with acute rachitis, yields just as promptly to phosphorous treatment as the laryngeal spasm. Of the conclusions of the author, the following are especially noteworthy: In the great majority of children suffering from respiratory spasm, one finds soft spots in the cranial bones; in the remainder, the retarded closure of the anterior fontanelle or the characteristic deformity of the cranial bones allows one to diagnose rachitis. The spasm af the vocal chords is observed almost exclusively at the age when rachitis is at its height. The laryngo spasm and the closely related expiratory apnoea attack children more frequently in winter and spring, that is, at a time when rachitis is most frequent and intense. Besides suffering from the respiratory spasms, children, with acute cranial rachitis, suffer from a series of nervous disturbances, in the following order of frequency: (a) Insomnia, hyperidrosis of head, starting from visual or auditory stimuli. (b) Excessive excitability of the facial nerve, "facialis phenomen." (c) Expiratory apnoea and spasm of the glottis. (d) General convulsions. (e) Hyperidrosis universalis. (f) Trouseau's symptom. (g) Spontaneous attacks of tetany. (h) Nystagmus and spasmus nutans. All nervous manifestations in rachitic children are strikingly relieved by phosphorus in medicinal doses, most speedily the general convulsions, the insomnia, the respiratory spams and spontaneous attacks of tetany, and somewhat later the spasmus nutans.

Boston on Our New Station.—The Boston *Herald* has the following note regarding our new reception-palace for travelers:

"Our new Union Passenger Station is very fine, but it cannot compare with the new one just completed in St. Louis, which is the most splendid and costly railway station in the world. All the great transcontinental lines that center at St. Louis have combined in the building of a vast structure covering 11 acres of ground, designed and built with skill and taste, at a total cost of $6,500,000. The train shed next in size to this station is that at Frankfort-on-the-Main. The third is the Reading Station, Philadelphia, with the Boston Station next. The Broad Street, Philadelphia, ranks fifth, and then comes the St. Pancras, London, the Pennsylvania, Jersey City, and the Grand Central, New York."

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GYNECOLOGY.

BY T. C. WITHERSPOON, M. D.,

ST. LOUIS.

Vaginal Hysterectomy Without Clamp or Ligature.—Dr. Emory Lanphear read a paper before the Missouri Valley Medical Society, entitled "Vaginal Hysterectomy without Clamp or Ligature." He had found it applicable in procidentia, early cervical cancer, and small intra-mural fibroids. He agrees with Dr. Pratt in his conclusions regarding the operation: No hemorrhage, early repair, no shock of consequence, and instead of being a major operation it becomes one of minor import, at least in its danger to the patient.

Pus Tubes.—An editorial in the *Omaha Clinic*, commenting upon Dr. Goodell's paper, quotes a statement of Reamy to the effect that "he had not seen five cases of death directly traceable to ruptured pus tubes." The article continues: "Chronic diseases of the appendages usually affect the well-being of the woman, but they do not ordinarily threaten her life in any other way than by the wear and tear of prolonged discomfort. Fatal attacks of peritonitis or deatn from chronic abscess or from bursting of a pus tube into the cavity of the peritoneum are extremely rare." In all of this we can agree, but the other side of the shield has not been alluded to; that is the part played by the lymphatics. I have seen but one death that I believed directly traceable to a rupturing of a pyosalpinx, but recall a number of cases directly traceable to the lymphatic distribution of the trouble. A pus tube while acquiescent, is a constant menace to the patient. A pathological condition, however inactive, always renders the affected area susceptible to grave and acute exacerbations. The board-like pelvic floor, the immobile contents, the suffering and invalidism, and the deaths from the thousand exciting causes of acute exacerbations of these inflammatory processes cry out to us constantly for well-directed and energetic surgical aid in such cases.

Myomectomy During Pregnancy.—Stavely considers that with our present experience, and with the improvements which have acted so beneficially on modern surgery, myomectomy for pedunculated or sessile tumors during pregnancies, in properly selected cases, comparatively safe and thoroughly justifiable. Since 1889, seventeen cases have been reported, with a death-rate of 11.75 per cent. The properly selected cases no doubt, will do well by such procedures, but such a rule, enunciated as a guide to the ambitious, will be dangerous in the extreme.

Sloughing of the Vagina.—Dr. C. E. Nammack reports a case of gangrenous sloughing of the vagina, brought on by a physician introducing four ounces of tincture of chloride of iron on cotton, to check the hemorrhage of abortion. The use of the iron preparations for controlling hemorrhage could not be too often condemned.

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Extirpation of the Uterus in Diseases of the Annexa.—Dr. Baldy says: 1st. All patients are not cured after the removal of the tubes and ovaries, but a large majority still continue to suffer as before the operation. 2d. So far, those upon whom hysterectomy was done, after double ovariotomy has failed, have been relieved. 3rd. The operation does not increase the mortality above that of double ovariotomy. 4th. The retention of the uterus is disadvantageous and dangerous to the patient because (a) metrorhagia and muco-purulent discharges may continue indefinitely; (b) the pelvic floor is more apt to sink to a lower level than after hysterectomy; (c) about 20 per cent of all cases of pus tubes are of tubercular origin; (d) the elimination of any fear of malignancy is by no means a small consideration. The cases for removal with the diseased appendages are those where the womb is greatly enlarged or diseased; where there is good reason for believing the organ will become the seat of disease; where its removal will give greater security against hemorrhage. The operation advocated is supra-pubic because: 1st. All parts are exposed to the eye and touch, which gives greater accuracy and security. 2d. All intestinal injuries may be readily discovered and corrected. 3d. The annexa may be completely removed with the womb. 4th. The handling and care of peritoneums in finishing the operation is made easier and more advantageous. Dr. King, commenting upon the same subject, gives the following reasons for removing the uterus: 1st. The uterus without the annexa is a useless organ and devoid of physiological function. 2d. It is not innocuous; it is on the contrary, a diseased and, therefore, harmful organ. Dr. Hanks: "There are three conditions in which I would advocate the extirpation of the uterus, in addition to the appendages: 1st. Where there is an old or recent pyosalpinx with much exudation. 2d. With purulent endometritis. 3rd. With chronic catarrhal endometritis. In puerperal metritis or perimetritis it is often the operation of choice."

Masturbation in a Female Child.—Dr. P. F. Barbour reported a case of masturbation in a 20 months old child (female). The child was brought to him with the diagnosis of chorea or epilepsy. She would throw her head back, her hands down to her side, and become rigid; eyes wide open and legs extended. On examination he found the clitoris slightly adherent and irritated. Bromide of potash rapidly relieved the symptoms. The diagnosis was proven by pressing upon the irritated clitoris, when she would have a spell which was a perfect illustration of an orgasm.

T. C. Witherspoon

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ABSTRACTS FROM FOREIGN MEDICAL LITERATURE.

BY W. C. MARDORF, M. D.,

ST. LOUIS.

A Spontaneous Cure of Atresia of the Rectum.—Dr. J. Marer reports the case of a boy, five days old and well developed (*Allg. Wien. Med. Zeit.*), whose bowels had not moved since birth, in spite of various means employed to that end. The abdomen was much enlarged and tympanitic, and there was persistent stercoraceous vomiting, the vomit containing meconium. The anal opening was well formed, but 7 ctm. above it the finger met with a resistance, the gut being much narrowed; this obstruction was readily overcome by a cautious twisting of the finger. On withdrawing the finger Dr. Marer found it covered with meconium, which led him to believe the obstruction was permanently relieved, but in this he was disappointed, as the symptoms of ileus steadily continued. Assuming that the obstruction was located higher up, he made a further examination with an elastic bougie, and found that there was a complete occlusion of the rectum 9 centimeters above the anus. Surgical measures were proposed, but the parents refused their consent, and Dr. Marer left, expecting the case would terminate fatally. Contrary to all expectations, however, there was a free evacuation the next day, of a large quantity of meconium and ordinary fecal matter. Dr. Marer explains the case by supposing that there was an invagination of the upper end of the bowel into the lower segment as a result of the increased peristalsis and prolonged straining; adhesive peritonitis followed with rupture of the dividing wall and recovery.

Treatment of Hydrocephalus.—This is the title to an interesting article in the "*Correspondenz Blatt fur Schweizer Arzte*," abstracted by the "*Deutsche Medizinal Zeitung*." It is unfortunate, however, that the abstractor should have forgotten to give the name of the author. The latter is decidedly in favor of treating hydrocephalus by puncture, and in a recent case, that of a child aet. 7½ months, in which sight was completely lost by pressure of the fluid upon the optic nerve, he restored vision by puncture and evacuation, thus relieving the pressure. The observations of the author, which he details at length, and the successful results of evacuation in the hands of others, have enabled the writer to recapitulate as follows, some of the advantages of this procedure: 1. Cessation of convulsions (von Bergmann). 2. Subduing of cerebral excitement (Wyss). 3. Favorable influence upon physical development (Rehn, Phocas, Quincke (Wyss). 4. Improvement and ofttimes complete restoration of psychical functions (Rehn). Restoration of the sense of sight (Wyss). These results outweigh by far, the unfavorable effects which have been noted by observers, and which are enumerated as follows: 1. The formation of a haematoma (Quincke), a very infrequent occurrence, which is to be avoided by lumbar instead of cranial puncture. 2. Septic infection and

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subsequent meningitis (not to be ascribed to the operation itself, and avoidable by strict asepsis and antisepsis). Meningitis following pressure-gangrene, from resting too long in one position, following this operation. (This also happens when there has been no interference; it may be avoided by removing small quantities of fluid at a time). 4. Collapse; no very serious cases have been as yet reported. Puncture, therefore, whether of the skull or of the subdural space in the lumbar region, is not to be regarded as an experiment or an operation of but little importance; according to the author, it is justifiable and positively indicated in: 1. Severe pressure symptoms of acute meningitis. 2. Non-tubercular meningitis in more chronic forms of hydrocephalus. 3. Enlargement of the cranium following meningitis; here more than one operation will probably be necessary. 4. Loss of important functions, such as loss of vision during hydrocephalus, without evidence of neuritis. In his opinion it is not improbable, yet still possible, that puncture and evacuation may have a favorable action even in these cases of loss of vision in hydrocephalus where optic neurosis is found to be present. In any event, optic neuritis is no contra-indication, though in long-continued blindness with decided atrophy of the optic nerves the hope of a restoration or much improvement of the function is certainly very slight.

Gland Fever.—This name was first employed by Emil Pfeiffer, of Wiesbaden, several years ago, to designate a condition of disease which, clinically at least, differs so widely from all previously known pathological processes that it can be classified among them only by the employment of arbitary force. Dr. A. Seibert describes the following case, in the *N. Y. Medicinischer Monatsschrift*, which occurred at the St. Francis Hospital under his observation. E. G., a boy of 14 years, was taken sick a week before his reception into the hospital, with a chill, vomiting, and slight diarrhea. He was sent to the hospital with the diagnosis of meningitis. On examination the boy was found to be well nourished and strongly developed; the rectal temperature was 103.3 F., pulse 116, respiration 28, nervous system undisturbed. Although the boy was lying on his back, the head was thrown backwards in a pronounced condition of opisthotonos, the cervical muscles being apparently contracted. There was no eruption present; the boy complained of pains in head and neck. Physical examination of the thorax and abdomen gave negative results; urine normal. An examination of the mouth and pharynx showed no trace of membrane or even inflammation. On palpating the neck externally, there were found posteriorly and at the sides many hardened, small lymphatic glands, especially between the upper layers of the muscles. There was no œdema or inter-glandular infiltration, and single nodules could be distinctly made out. These glands were extremely sensitive upon pressure, and the patient was unable to turn his head forward or to either side without causing the most exquisite pain, this fact explaining the rigid position of the head and neck. It should be mentioned that the pulse was regular; there was no sign of change. Stokes respiration, and the spleen was normal in size. Bowels somewhat constipated. Appetite moderately good. The temperature

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generally ranged between 100 and 104, at times reaching 105, and at others dropping to normal; in fact, the temperature curve much resembled one of intermittent fever. The relatively low temperature of the morning, the chill and subsequent rapid elevation of temperature within two hours, the short duration of the fever at its height, together with its prompt decline accompanied by profuse perspiration, would have made such a diagnosis only too probable, were it not for the rigidity of the neck and the absence of splenic enlargement. The deceptiveness of appearances was further shown on the administration of quinine; 10 grains in suspension with elix. taraxacum were given in the morning for three days in succession. This dose of quinine, certainly large enough for a boy of fourteen, failed to check the fever in the least; on the contrary, on these three days the temperature rose higher than usual, reaching 105, which it failed to do in the subsequent course of the fever after the administration of quinine was stopped. The absence of enlargement of the spleen, and of the plasmodium in the blood, were of themselves enough to exclude malarial fever, and the result of the administration of quinine served to substantiate this view. Rises of fever on the 23d and 27th days were accompanied by renewed invasions of the cervical glands. The treatment in this case consisted in the use of cold to the neck in the form of an icebag, and attention to diet and hygiene. Dr. Seibert states that he has paid particular attention to these cases since the work of Pfeiffer first appeared. The high, intermitting fever, and the sudden onset with headache, vomiting, slight diarrhea and extreme malaise, are all characteristic. The duration is seldom as long as in the case described; the attack is usually over in a week. In two cases the glands of the left groin and upper part of the thigh were affected, but the glands usually involved are those behind the sterno-cleido-mastoid muscles. In making a differential diagnosis it is important to remember the following points: 1. The pharynx is usually healthy, sometimes slightly reddened. In the latter case this probably indicates the site of infection. Swelling and false membrane are always absent. 2. Glandular invasion is not simultaneous, so that children generally carry the head to one side for the first few days. 3. The swollen glands are extraordinarily painful, and there are lancinating pains of the sac and scalp. 4. Edematous infiltration of the cellular tissue about the glands is wanting. 5. Each gland is hard and easily felt, and usually about the size of a pea. 6. Suppuration never takes place. The prognosis is generally favorable; in one case of the author's, however, paralysis of the vagus was caused by pressure during a severe relapse. The following is the literature obtainable: Pfeiffer, Jahrb. für Kinderh, N. F., Bd. XXIX. Heubner, Ibidem, p. 264. v. Starck, Ibid., Bd. 31. Rauchfuss, Ibid., p. 461. Protassow, Ibid., Bd. 32.

A Hospital for Consumptives.—New York City recently established a hospital for consumptives. It is located on West 38th Street, and Dr. Chas. E. Quimby is the attending physician, a former associate of Dr. A. L. Loomis. It is the intention of the managers of the hospital to make arrangements for sending patients to a sanitarium near the mountains when such a change is thought best.

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Medical Melange

Poisoning by Potassic Chlorate—

MARKWALD relates a case in a man aged 53. A 3 per cent solution was ordered for the purpose of gargling every two hours. On the next day the tonsillitis was subsiding and he was feeling fairly well. During the following night he had severe pain in the stomach and lower abdomen, vomiting and diarrhoea. Four hours later severe collapse was present, the vomiting and pain continuing. The pulse was small and rapid. The urine passed shortly afterwards was of a deep brown color. It contained haemoglobin, but no red blood cells. Besides a granular deposit the urine also contained fairly abundant hyaline casts covered with granules, and in addition renal epithlium. On the second day the color was deeper but in the course of the next few days it became clear and no more casts were found. The author says that the blood also showed the characteristic changes seen in haemoglobinaemia. Some jaundice was noted on the second day, which lasted four days. He had used the gargle more frequently than directed, and had also roughly made the solution for himself. It was calculated that he had used 17 g. of the salt in about 3 litres of water. He was not aware of having swallowed any. The author thinks that there must have been some idiosyncrasy present and it was ascertained that the patient had previously had unpleasant symptoms after the use of potassic chlorate gargle. As regards treatment the collapse must be warded off and large quantities of fluid given by the mouth to flush the kidneys. Eventually venesection and the infusion of saline solution may be necessary.—British Medical Journal.

Diabetes—

UNSCHULD draws attention to some of the less noticed symptoms in early diabetes. He quotes a number of illustrative cases in which the disease was masked by the presence of dyspeptic symptoms, nervous symptoms classed as neurasthenia, etc. Sometimes diabetes may quite accidentally be discovered. Here marked thirst and abundant urine were mostly absent. Frequently cramp in the calves is complained of, a symptom at present but little recognized. During the past eight years the author has found it in as many as 26 per cent. of his cases. In 1891 he found it 33 times among 109 cases. It most often occurs in the morning, but sometimes at night. If such cramps occur and the patient complains of weariness and weakness, the urine should be at once examined for sugar. These cramps may be present in all forms of diabetes, except in the acute disease occurring in young subjects. Massage and attempts at walking generally relieve the cramp. The cause is obscure; perhaps it is due to the diabetic toxins. The recognition of these cramps may lead to the early diagnosis of diabetes.—British Medical Journal.

The Antisepic Treatment of Scarlet Fever—

DR. W. JAMISON (London Practitioner, vol. li, p. 454, from the Medical Magazine,) says that there appears to be four points requiring consideration: (1) The course of the infectious principle, (2) the treatment of the throat and mucous membranes, (3) the management of the skin, (4) the value of the "so-called" complete isolation alone, as compared with antisepic measures and restricted isolation.

(1) There are three routes by which scarlatinal poison can enter the system: (a) by direct inoculation, which is rare; (b) by being swallowed, a more common source, the medium frequently being milk, a fluid in which the virus grows rapidly; (c) by inhalation, the most common method of transmission. Probably in all cases the first symptoms are manifested in the throat; the second, usually within twenty-four hours, as the eruption on the skin. It is almost certain that during the period of pyrexia the virus is multiplying in the blood, and is in process of being conveyed to the under surface of the skin. Deposited beneath the epidermis, it raises through its layers, and is fin-

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ally cast off in flakes of exfoliating cuticule. Dr. J. has seen desquamation commence on the fourth day, but in the majority in instances it manifests itself from the ninth to the eleventh day. The process of "peeling" is not completed, if uninterfered with, till the end of the eighth week. It is never absent in a genuine case of scarlet fever.

(2) The best application to the throat is a spray of peroxide of hydrogen, ten-volume strength, repeated from three times daily to once in two hours. It should be continued, the intervals being extended, till its application no longer induces pain.

(3) As regards the management of the skin, in the stage of exanthem we must favor the development of the rash by warm baths, which are best given at night, after which the entire surface must be smeared with eight ounces of almond or olive oil, containing a fluid dram of carbolic acid, and two or four fluid drams of oil eucalyptus. When desquamation commences, the warm baths must be supplemented by soap. Keep the patient in bed for three weeks, who should not be allowed to mix with others until peeling is complete and the hair washed several times.

(4) Dr. J. is of the opinion that isolation alone can not prevent infection, but no risk exists if the antisepic precautions described are attended to. The nurse ought to wear a cotton wrapper, which can be laid aside when she leaves the room. The bed and body linen should be immersed in carbolic solution after being taken from the room.

Europhen in the Treatment of Chancroids—

Dr. Arthur Strauss who has recently written an excellent review of the therapeutics of Europhen, speaks as follows with regard to its use in chancroidal affections:

In the treatment of soft chancres Europhen has been highly recommended as a substitute for iodoform especially on account of its odorlessness. Rapid healing was observed after its use by Gilbert, Kopp, Migneco, Eichler, and Migneco regarded its antiseptic power as greater than that of iodoform. Nolda obtained a cure in six cases; in four in from seven to nine days; in the rest in twelve to fourteen days. In a case of large chancroid, one-half of which was treated with iodoform and the other with Europhen, the latter produced more rapid healing than the former, although applied to the worse looking part. Rosenthal prefers Europhen to iodoform on account of odorlessness. Richtmann usually obtained a cure within two weeks. In a comparative trial of Aristol and Europhen healing occurred four days earlier with the latter than with the former, while with a mixture of both these substances, 4 to 5, he secured a cure two days earlier than with Europhen alone. On the ground of six cases Estay concludes that Europhen has as much antiseptic power as iodoform and is a perfect substitute for the latter, and that it is preferable on account of its caustic action due to the separation of iodine, its agreeable odor, greater lightness, nontoxic character, and greater adhesive power. Under application of the powder a cure is effected within ten days. Its freedom from odor and irritation is praised by Oeffelein and Neuberger, whose experience is confirmed by Rosenthal. To prevent adhesion of the powder and the formation of crusts which when removed are apt to produce bleeding the latter advises that one or two drops of olive oil be dropped upon the powder. Eichhoff treated thirty-one cases with an average period of cure of fourteen days; Kopp nineteen cases in which healing occurred in from four to eleven days. In five cases he employed the following procedure; after curettage under local anaesthesia and arrest of hemorrhage with sublimate compresses he applied a dry dressing of Europhen 1.0 Gm. boric acid finely powdered 3.0 Gm., the crust formed being covered daily with the same powder. In fourteen other cases the ulcers were cleansed with 1 per cent sublimate solution and then covered with a mixture of Europhen and boric acid 1.3 to 1.5 twice or thrice daily; complete healing ensued, on the average in fourteen days. Ullmann noted cicatrization of small ulcers within at least ten days, of larger sores in from two to three weeks. The application of a 5 per cent solution of sulphate of copper to profuse suppurating or sloughing surfaces two or three times

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weekly aided the healing process. Recurrences, gangrene or autoinfection were never observed. Ullmann also recommends a 3 per cent Europhen ether spray applied once daily.

The Next Annual Meeting of the British Medical Association.

The next annual meeting of the British Medical Association will be held in London. The president of the Royal College of Physicians, Dr. Russell Reynolds is the president-elect. This will undoubtedly be an important professional gathering. The last meeting of the association in London was held in 1873, the president on that occasion being Sir William Fergusson. The former meeting included 3,000 members of the association, and it is probable that on this occcasion the number will be at least double. At the meeting of 1873 Mr. Gladstone delivered his famous speech on the supremacy of the medical profession; its great advances in knowledge of recent years, and the large prospect which lies before it. Sir Richrad Quain was then chairman of the Metropolitan Branch and of the reception committee, a post which will now be held by Sir William Priestley.—British Medical Journal.

The following experience of a French physician in attempting to collect a bill due him would seem to indicate that the American doctor is not the only one who experiences difficulty in collecting his bills: Dr. Menard, physician at the Berck Hospital, after a visit to a patient whom he had treated for a long time, handed his account to the child's father. The latter refused to pay, locked himself in with the doctor, drew a pistol from his pocket, and threatened to shoot Dr. Menard if he did not sign two promises to pay 200 pounds. Dr. Menard wrote them to gain time, then he tore them up and wrested the pistol from his aggressor, but was slightly wounded in the struggle. The man was arrested.

Dr. Sam—

(By Eugene Field.)

Down in the old French quarter
(Just out of Rampart street)
I wend my way
At close of day
Unto a quaint retreat
Where lives the Voodoo Doctor,
By some esteemed a sham—
Yet I'll declare there's none elsewhere
So skilled as Dr. Sam.
With claws of a devilled crawfish,
The juice of a prickly prune,
And the quivering dew
From a yarb that grew
In the light of a midnight moon!

I never should have known him
But for the colored folk
That here obtain
And ne'er in vain
That wizard's arts invoke;
For when the eye that's Evil
Would him and his'n damn,
The negro's grief gets quick relief
Of Hoodoo-Doctor Sam!
With the caul of an alligator,
The plume of an unborn loon,
And the poison wrung
From a serpent's tongue
By the light of a midnight moon!

In all neurotic ailments
I hear that he excels,
An he insures
Immediate cures
Of weird, uncanny spells;
The most unruly patient
Gets docile as a lamb
And is freed from ill by the potent skill
Of Hoodoo-Doctor Sam!
Feathers of strangled chickens,
Moss from the dank lagoon,
And plasters wet
With spider sweat
In the light of a midnight moon!

They say when nights are grewsome
And hours are oh! so late,
Old Sam steals out
And hunts about
For charms that hoodoos hate!
That from the moaning river
And from the haunted glen
He silently brings what eerie things
Give peace to hoodooed men—
The tongue of a piebald possum,
The tooth of a senile coon,
The buzzard's breath that pants for death,
And the film that lies
On a lizard's eyes
'Neath the light of a midnight moon!

For the treatment of Malarial Fevers, Lotsil, combined with Quinine, increases the efficacy of the latter, and prevents its unpleasant effects.

Lotsil is supplied in ounces, finely powdered, or in 5 gr. Perfection Tablets, at 40c per ounce.

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Proto Carb of Iron, 3 grains.
Dose, 1 to 3 Pills.
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(Dr. Goodell.)

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Pv. Nux Vom.....¼ gr. Sulphur.....⅛ gr.

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Therapeutic Notes.

Treatment of Epilepsy—

DR. F. C. WISER, Falls City, Neb., reports (Jour. Materia Medica.) two cases of epilepsy treated with Tilden's hydrocyanate of iron. He says: "I have had marked improvement in every case that I have treated with it and complete recovery in two cases as follows:

Case No. I, Mr. M., age 43, family history good. At the age of 20 the patient had left forearm crushed and had it amputated at the juncture of the lower with the middle third; after the wound commenced to heal patient commenced to have epileptic attacks which increased in severity until he would have on an average one a week and some days would have three or four seizures. I saw the patient in January, 1893, and learned that he had been taking bromides for a long time, with little or no result. Upon examination of the stump I found it extremely tender upon deep pressure, due to the presence of a neuroma at the end of the ulna and median nerves. I amputated the limb higher up giving the patient a good stump, and commenced giving the bromide of potassium in 20 grain doses four times daily to break up the epilepsy; but the attacks continued to recur. I gave the bromides a thorough trial and finally in May, 1893, I commenced using your hydrocyanate of iron in one 2-grain doses three times daily. After I commenced its use the patient had but one attack which occurred on the next day after the iron was given. I kept up the treatment for three months and have heard from the patient since. He has never had an attack since and at present is in good health.

Case No. 2, Mrs. B., aged 32, married, has two children, youngest aged 5.

This patient came to me February, 1863, she gave a history of having epileptic attacks from childhood, which came on at irregular intervals, ranging from two or three in a single week to only one in two months.

I commenced using the bromides, but did not get very much effect from their use. Finally in May, 1893, I commenced using the hydrocyanate of iron in 1-2 grain doses three times daily. After the first month's treatment the attacks grew less frequent so that in the four months thereafter she only had one attack. I kept up the treatment until December, 1893, gradually decreasing the size of the dose after the first four months until the last month when I gave patient only 1-2 grain of the preparation daily. This patient is in good health and has not had an attack since July, 1893.

I have cases under treatment now and they are all improving.

Dysmenorrhea—

C. F. Baker, M. D., Decatur, Mich., says: I have prescribed Aletris Cordial in two cases with very favorable results. The first a case of suppressed menses of short duration. Her age was about fifteen years. Had been regular for over a year; missed her catamenia for the first time, and suffered from headache and general malaise. The Aletris Cordial, in teaspoonful doses three times a day, set her all right in a few days. The second was a case of dysmenorrhea. Age of patient about twenty-eight or thirty years. Had always suffered extremely at her menstrual periods, unless under the influence of some narcotic, and almost always obliged to take her bed for two or three days at each period. She used a half-pound bottle of the Aletris Cordial, in teaspoonful doses three times a day, with perfect relief from pain while under the influence of the Cordial, or to use her own words, she would not have known by her feelings that she was unwell, and did not feel different in any respect than when in her usual health.

Kennedy's Extract of Pinus Canadensis, which is now made by the Rio Chemical Co., of St. Louis, has long been known in this country, chiefly from the endorsement it received from the late Dr. Marion Sims, as an efficient astringent and alterative when applied to mucous surfaces. It now seems to be coming into extensive use in England, where many medical men have reported excellent results with it in various catarrhal difficulties.

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Security Against Imposition—

This heading is suggested by and is particularly applicable to the new advertisement of the Antikamnia Chemical Company, which appears in this issue. Antikamnia, while not suffering anything like other standard preparations from substitution, has still found it in some few instances. To the end, therefore, that there may not be even the breath of suspicion against Antikamnia, as well as to give every doctor the fullest confidence, the company has gone to the expense of withdrawing all the old stock from the market and replacing it with new. In the new form the drug is identically the same chemically and medicinally as it always has been, but every tablet bears imprinted upon it a monogram. (See advertisement.) Every package of powder or tablets is so wrapped and sealed, and resealed as to render counterfeiting impossible. The entire profession should insist upon the safeguards provided, and there can be no question but that this action will be regarded with great favor by them. The latest edition "Antikamnia and Codeine" tablets, can be obtained direct, or from your druggist. Each tablet contains 4 3-4 gr. Antikamnia and 1-4 gr. Codeine.

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Water, 27 parts;
Vaseline, 15 parts;
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Essence of lavender, enough to perfume.

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Physicians who employ iron in their practice should be greatly interested in a new Iron preparation recently introduced to the medical profession by Frederick Stearns & Co., Detroit, Mich., called Haemoferrum (blood iron). This is a neutral proteid compound aseptically prepared from fresh bullock's blood, and put up in three grain pilloids (flat pills), with a highly soluble coating. F. Stearns & Co. claim their Haemoferrum to be free from all objectionable features hitherto attending the administration of iron in other forms, it being extremely soluble, pleasant to the taste, agreeable in odor, is readily and easily assimilated, and neutral in reaction. Furthermore it is non-constipating (a valuable characteristic), non-irritating and non-poisonous, even in large doses.

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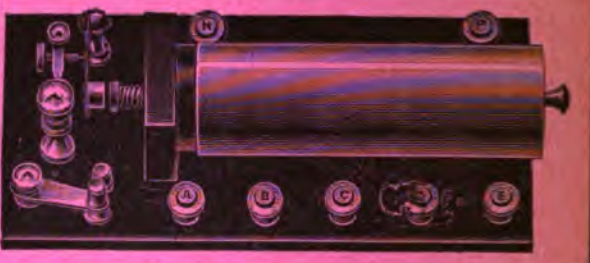

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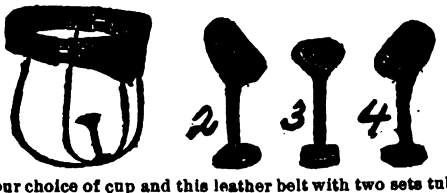

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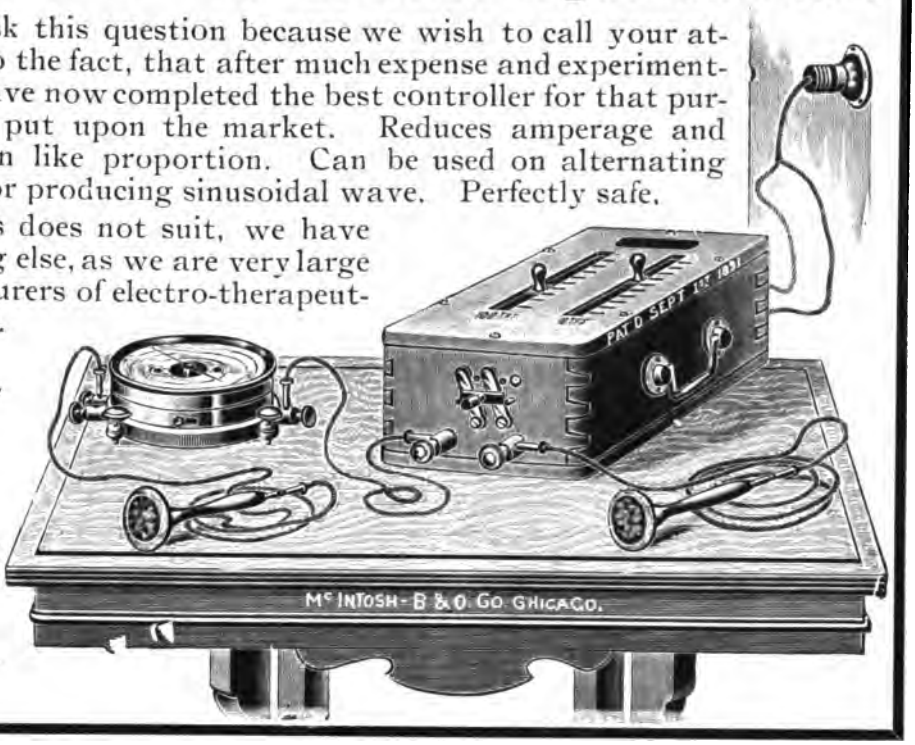

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